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ABSTRACT

Although teen sexual activity has declined in recent years, the overall rate is still high. The problems associated with teen sexual activity are well known. Less widely known are the psychological and emotional problems associated with this activity. The present study examines the linkage between teenage sexual activity and emotional health. The findings show that when compared to teens who are not sexually active, teenage boys and girls who are sexually active are significantly less likely to be happy, more likely to feel depressed, and significantly more likely to attempt suicide. Thus in addition to its role in promoting teen pregnancy and the current epidemic of STDs, early sexual activity is a substantial factor in undermining the emotional well being of American teenagers. There has been a growth in abstinence education programs over the past five years. The best abstinence programs teach 1) the primary importance of delaying sexual activity 2) that human sexual relationships are predominantly emotional and moral rather than physical in character and 3) that teen abstinence is an important step leading toward a loving marital relationship as an adult. Such programs are uniquely suited to meeting both the emotional and physical needs of America's youth. (Contains 10 references, 3 tables, and 1 appendix.) (ADT)

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A Report of The Heritage Center for Data Analysis

Sexually Active Teenagers Are More Likely to Be Depressed and to Attempt Suicide

Robert E. Rector, Kirk A. Johnson, Ph.D., and Lauren R. Noyes

CDA03-04 June 2, 2003

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SEXUALLY ACTIVE TEENAGERS ARE MORE LIKELY TO BE DEPRESSED AND TO ATTEMPT SUICIDE

ROBERT E. RECTOR, KIRK A. JOHNSON, PH.D., AND LAUREN R. NOYES

Teenage sexual activity is an issue of widespread national concern. Although teen sexual activity has declined in recent years, the overall rate is still high. In 1997, approximately 48 percent of American teenagers of high-school age were or had been sexually active.

The problems associated with teen sexual activity are well-known. Every day, 8,000 teenagers in the United States become infected by a sexually transmitted disease.[1] This year, nearly 3 million teens will become infected. Overall, roughly one-quarter of the nation's sexually active teens have been infected by a sexually transmitted disease (STD).[2]

The problems of pregnancy and out-of-wedlock childbearing are also severe. In 2000, some 240,000 children were born to girls aged 18 or younger.[3] Nearly all these teenage mothers were unmarried. These mothers and their children have an extremely high probability of long-term poverty and welfare dependence.

Less widely known are the psychological and emotional problems associated with teenage sexual activity. The present study examines the linkage between teenage sexual activity and emotional health. The findings show that:

- When compared to teens who are not sexually active, teenage boys and girls who are sexually active are significantly less likely to be happy and more likely to feel depressed.
- When compared to teens who are not sexually active, teenage boys and girls who are sexually active are significantly more likely to attempt suicide.

Thus, in addition to its role in promoting teen pregnancy and the current epidemic of STDs, early sexual activity is a substantial factor in undermining the emotional well-being of American teenagers.

DATA SOURCE AND METHODS

The data used in this analysis are taken from the National Longitudinal Survey of Adolescent Health, Wave II, 1996. This "Ad-Health" survey is a nationwide survey designed to examine the health-related behaviors of adolescents in middle school and high school. Its public-use database contains responses from approximately 6,500 adolescents, representative of teenagers across the nation. The survey is funded by the National Institute of Child

1. Meg Meeker, *Epidemic: How Teen Sex Is Killing Our Kids* (Washington, D.C.: Regnery Publishing Company, 2002), p. 12.
2. *Ibid.*, p. 13.
3. National Center for Health Statistics, "Births: Final Data for 2000," *National Vital Statistics Report*, Vol. 50, No. 5 (February 12, 2002), p. 46.

Health and Human Development (NICHD) and 17 other federal agencies.

This Heritage CDA analysis focuses on the link between sexual activity and emotional well-being among teens in high school years (ages 14 through 17). The Ad-Health survey asks students whether they have "ever had sexual intercourse."[4] For purposes of analysis, teens who answered yes to this question are labeled as "sexually active" and those who answered no are labeled as "not sexually active."

The survey also records the emotional health of teens. Students are asked how often, in the past week, they "felt depressed." They are provided with four possible answers to the question: They felt depressed

(a) Never or rarely,

(b) Sometimes,

(c) A lot of the time, or

(d) Most of the time or all of the time.

For purposes of analysis, the classification of "depressed" is given to those teens who answered yes to options "c" or "d"—that is, they said they felt depressed a lot, most, or all of the time. Thus, throughout the paper, the terms "depressed" or "depression" refer to this general state of continuing unhappiness rather than to a more specific sense of clinical depression.

SEXUAL ACTIVITY AND DEPRESSION

The Ad-Health data reveal substantial differences in emotional health between those teens who are sexually active and those who are not. As Charts 1 and 2 show:

- A full quarter (25.3 percent) of teenage girls who are sexually active report that they are depressed all, most, or a lot of the time. By con-

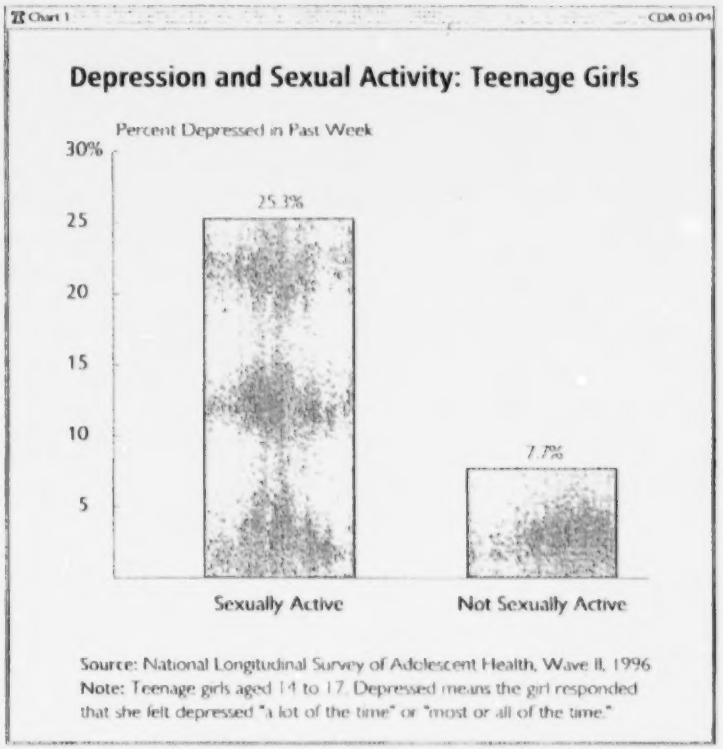
Chart 1
CDA 03-04
Depression and Sexual Activity: Teenage Girls
Percent Depressed in Past Week
30%
25
20
15
10
5
25.3%
7.7%
Sexually Active
Not Sexually Active
Source: National Longitudinal Survey of Adolescent Health, Wave II, 1996
Note: Teenage girls aged 14 to 17. Depressed means the girl responded that she felt depressed "a lot of the time" or "most or all of the time."

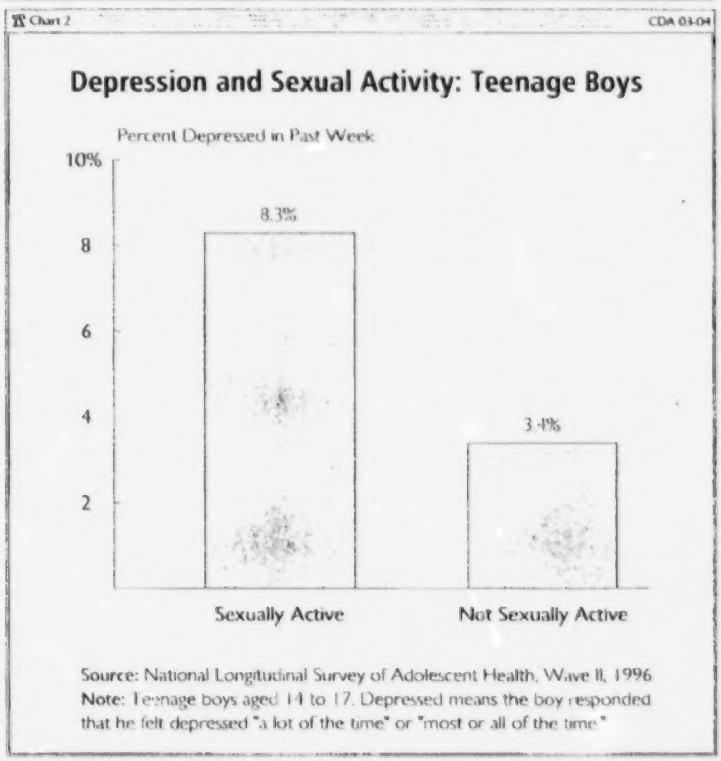
Chart 2
CDA 03-04
Depression and Sexual Activity: Teenage Boys
Percent Depressed in Past Week
10%
8
6
4
2
8.3%
3.4%
Sexually Active
Not Sexually Active
Source: National Longitudinal Survey of Adolescent Health, Wave II, 1996
Note: Teenage boys aged 14 to 17. Depressed means the boy responded that he felt depressed "a lot of the time" or "most or all of the time."

4. For the full wording of each question referred to in the text, see the Appendix.

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trast, only 7.7 percent of teenage girls who are not sexually active report that they are depressed all, most, or a lot of the time. Thus, sexually active girls are more than three times more likely to be depressed than are girls who are not sexually active.

- Some 8.3 percent of teenage boys who are sexually active report that they are depressed all, most, or a lot of the time. By contrast, only 3.4 percent of teenage boys who are not sexually active are depressed all, most, or a lot of the time. Thus, boys who are sexually active are more than twice as likely to be depressed as are those who are not sexually active.

Table 1 CDA 03-04

Depression and Sexual Activity

	Never/Rarely Depressed	Depressed Sometimes	Depressed A Lot	Depressed Most/ All of the Time
BOYS 14-17				
Sexually Active	63.3%	28.4%	5.0%	3.3%
Not Sexually Active	76.2%	20.3%	2.6%	0.8%
GIRLS 14-17				
Sexually Active	36.8%	37.9%	15.5%	9.8%
Not Sexually Active	60.2%	32.1%	4.9%	2.8%

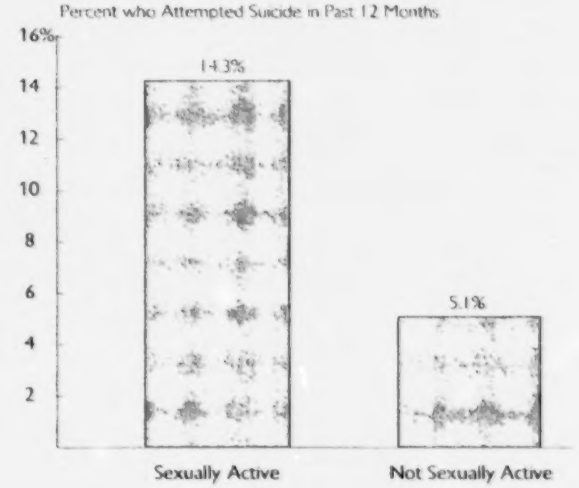
Source: National Longitudinal Survey of Adolescent Health, Wave II, 1996

Table 1 gives a complete breakout of these data. Note that a full 60.2 percent of sexually inactive girls report that they "rarely or never" feel depressed. For sexually active teen girls, the number is far lower: only 36.8 percent. Overall, for either gender, teens who are not sexually active are markedly happier than those who are active.

The link between teen sexual activity and depression is supported by clinical experience. Doctor of adolescent medicine Meg Meeker writes, "Teenage sexual activity routinely leads to emotional turmoil and psychological distress.... [Sexual permissiveness leads] to empty relationships, to feelings of self-contempt and worthlessness. All, of course, precursors to depression."[5]

Chart 3 CDA 03-04

Attempted Suicide and Sexual Activity Among Teenage Girls



Source: National Longitudinal Survey of Adolescent Health, Wave II, 1996
Note: Teenage girls aged 14 to 17.

SEXUAL ACTIVITY AND ATTEMPTED SUICIDE

The Ad-Health survey also asks students whether they have attempted suicide during the past year. As Charts 3 and 4 show, the link between sexual activity and attempted suicide is clear.

- A full 14.3 percent of girls who are sexually active report having attempted suicide. By contrast, only 5.1 percent of sexually inactive girls have attempted suicide. Thus, sexually active girls are nearly three times more likely to

5. Meeker, *Epidemic: How Teen Sex Is Killing Our Kids*, p. 64.

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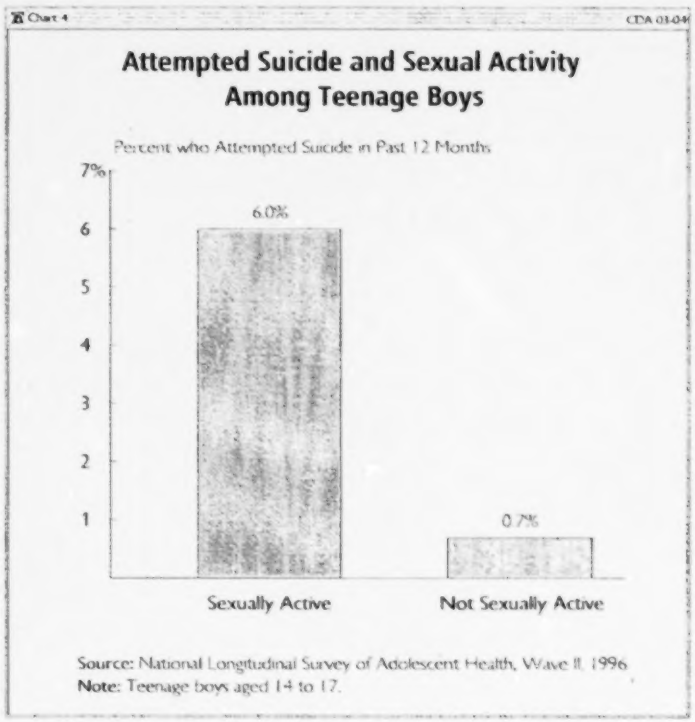
attempt suicide than are girls who are not sexually active.

- Among boys, 6.0 percent of those who are sexually active have attempted suicide. By contrast, only 0.7 percent of boys who are not sexually active have attempted suicide. Thus, sexually active teenage boys are eight times more likely to attempt suicide than are boys who are not sexually active.



SOCIAL FACTORS

The differences in emotional health between sexually active and inactive teens are clear. However, it is possible that the differences in emotional well-being might be driven by social background factors rather than sexual activity *per se*. For example, if students of lower socioeconomic status are more likely to be sexually active, the greater frequency of depression among those teens might be caused by socio economic status rather than sexual activity.

To account for that possibility, additional analysis was performed in which race, gender, exact age, and family income were entered as control variables. This means that each teen was compared to other teens who were identical in gender, age, race, and income.

The introduction of these control or background variables had virtually no effect on the correlations between sexual activity and depression and suicide. In simple terms, when teens were compared to other teens who were identical in gender, race, age and family income, those who were sexually active were significantly more likely to be depressed and to attempt suicide than were those who were not sexually active.

TEENS EXPRESS REGRETS OVER SEXUAL ACTIVITY

The significantly lower levels of happiness and higher levels of depression among sexually active teens suggest that sexual activity leads to a decrease in happiness and well-being among many, if not most, teenagers. This conclusion is corroborated by the fact that the majority of sexually active teens express reservations and concerns about their personal sexual activity.

For example, a recent poll by the National Campaign to Prevent Teen Pregnancy asked the question, "If you have had sexual intercourse, do you wish you had waited longer?"[6] Among those teens who reported that they had engaged in intercourse, nearly two-thirds stated that they wished they had waited longer before becoming sexually active. By contrast, only one-third of sexually active teens asserted that their commencement of sexual activity was appropriate and that they did not wish they had waited until they were older. Thus, among sexually active teens, those who regretted early sexual activity outnumbered those without such concerns by nearly two to one.

As Table 2 shows, concerns and regrets about sexual activity are strongest among teenage girls. Almost three-quarters of sexually active teen girls admit they wish they had delayed sexual activity until they were older. Among sexually active teenage girls, those with regrets concerning their initial

6. National Campaign to Prevent Teen Pregnancy, "Not Just Another Thing to Do: Teens Talk About Sex, Regret, and the Influence of Their Parents," June 30, 2000.

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sexual activity outnumbered those without regrets by nearly three to one.

The dissatisfaction and regrets expressed by teenagers concerning their own sexual activity is striking. Overall, a majority of sexually active boys and nearly three-quarters of sexually active girls regard their own initial sexual experience unfavorably—as an event they wish they had avoided.

Table 2 CDA 03-04

The Majority of Sexually Active Teens Wish They Had Waited Longer Before Beginning Sexual Activity

Wish They Had Waited Longer Before Starting Sexual Activity	All Sexually Active Teens	Sexually Active Boys	Sexually Active Girls
Yes	63%	55%	72%
No	32%	39%	25%

Source: National Campaign to Prevent Teen Pregnancy, June 2000.
Note: Survey covers sexually active teens aged 12 to 17.

DISCUSSION

While the association between teen sexual activity and depression is clear, that association may be subject to different theoretical interpretations. For example, it might be that depressed teenagers turn to sexual activity in an effort to assuage or escape their depression. In this interpretation, the link between sexual activity and depression (presented in Table 1) might be caused by a higher level of sexual activity among those who are already depressed before commencing sexual activity. Thus, depression might lead to greater sexual activity rather than sexual activity's leading to depression.

In limited cases, this explanation may be correct; some depressed teens may experiment with sexual activity in an effort to escape their depression. However, as a general interpretation of the linkage between depression and teen sexual activity, this reasoning seems inadequate for two reasons. First, as Table 1 shows, the differences in happiness and depression between sexually active and inactive teens are widespread and are not the result of a small number of depressed individuals. This is especially true for girls. Second, the fact that a majority of teens express regrets concerning their own initial sexual activity strongly suggests that such activity leads to distress and emotional turmoil among many, if not most, teens.

Hence, the most likely explanation of the overall link between teen sexual activity and depression is that early sexual activity leads to emotional stress and reduces teen happiness.

Moreover, theoretical questions about whether teen sexual activity leads to depression or, conversely, whether depression leads to teen sexual activity should not distract attention from the clear message that adult society should be sending to teens. Teens should be told that sexual activity in teen years is clearly linked to reduced personal happiness. Teens who are depressed should be informed that sexual activity is likely to exacerbate, rather than alleviate, their depression. Teens who are not depressed should be told that sexual activity in teen years is likely to substantially reduce their happiness and personal well-being.

CONCLUSION

Sexual activity among teenagers is the major driving factor behind the well-publicized problems of the high incidence of teenage STDs and teen pregnancy. The analysis presented in this paper also shows that sexual activity is directly connected to substantial problems among teens regarding emotional health.

- Teenagers of both genders who are sexually active are substantially less likely to be happy and more likely to be depressed than are teenagers who are not sexually active.
- Teenagers of both genders who are sexually active are substantially more likely to attempt suicide than are teenagers who are not sexually active.

Until recently, society provided teenagers with classroom instruction in "safe sex" and "comprehensive sex education."[7] In general, these curricula fail to provide a strong message to delay sexual activity, fail to deal adequately with the long-term emotional and moral aspects of sexuality, and fail to provide students with the skills needed to develop intimate loving marital relationships as adults.

Over the past five years, there has been a growth in abstinence education programs that stand in

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sharp contrast to "safe sex" curricula. The best abstinence education programs teach:

- The primary importance of delaying sexual activity,
- That human sexual relationships are predominantly emotional and moral rather than physical in character, and
- That teen abstinence is an important step leading toward a loving marital relationship as an adult.

Such abstinence education programs are uniquely suited to meeting both the emotional and the physical needs of America's youth.

—Robert E. Rector is Senior Research Fellow, Kirk A. Johnson, Ph.D., is Harry and Jeanette Weinberg Fellow in Statistical Welfare Research in the Center for Data Analysis, and Lauren R. Noyes is Director of Research Projects in Domestic Policy at The Heritage Foundation.

7. Comprehensive sex-ed and safe-sex programs are sometimes misleadingly referred to as "abstinence plus" or "abstinence-based" curricula. In reality, such programs have little or no abstinence content. See Advocates for Youth, *Transitions*, Vol. 12, No. 3 (March 2001).

TECHNICAL APPENDIX

As noted in the text, this analysis utilized Wave II data from the National Longitudinal Survey of Adolescent Health, a survey that was fielded between April and August 1996.[8] The National Longitudinal Survey of Adolescent Health is a nationally representative survey designed to assess the health and risk behavior of America's youth. Sensitive questions of sexual activity and the like were asked in the child's home through an audio computer-assisted self-interview process. Parental consent was required before adolescents were allowed to participate. This analysis is concerned with the relationship between depression/suicide and sexual activity for individuals of ages 14 to 17 (high school–age adolescents). To that end, data from the following questions were used to gauge sexual activity, suicide attempt, and depression:

- **Sex**: Question H2CO2—"Have you ever had sexual intercourse? When we say sexual intercourse, we mean when a male inserts his penis into a female's vagina."
- **Suicide Attempt**: Question H2SU2—"During the past 12 months, how many times did you actually attempt suicide?"
- **Depression**: Question H2FS6—"How often was each of the following true during the past seven days? ...You felt depressed."

If an adolescent responded affirmatively to the "ever had sexual intercourse" question, he or she was coded as "sexually active," and vice versa. The suicide attempt variable was recoded as a "yes/no" variable: "yes" if the respondent had attempted suicide at least once and "no" otherwise. Respondents were coded as "being depressed" if they said that they were depressed "a lot of the time" or "most of the time or all of the time." They were coded as "not depressed" if they responded that they were depressed "never or rarely" or "sometimes." The data were rejected if the respondent did not give a usable answer to any of the questions; for example, if a respondent refused to answer the "ever had sexual intercourse" question, he or she was eliminated from the analysis.

The statistical analysis took two forms. First, a basic correlation analysis showed that there is a positive and highly statistically significant relationship between sexual activity and depression/suicide attempt. Put another way, sexually active adolescents are more likely to be both depressed and suicidal. Both correlations are highly statistically significant at more than a 99.9 percent confidence level.[9]

Table 3 CDA 03-04

Percentage Reporting Depression or Suicide Attempts, by Sexual Activity

	Male	Female
Sexually Active and Depressed	8.30	25.31
Standard Error (in Percentage Points)	(1.71)	(4.50)
Not Sexually Active and Depressed	3.43	7.67
Standard Error (in Percentage Points)	(0.74)	(0.95)
Sexually Active and Attempted Suicide	6.00	14.26
Standard Error (in Percentage Points)	(1.54)	(3.37)
Not Sexually Active and Attempted Suicide	0.73	5.09
Standard Error (in Percentage Points)	(0.31)	(0.84)

Source: National Longitudinal Survey of Adolescent Health, Wave II, 1996

8. Wave III data are scheduled for release later this spring.

9. When analysts discuss "confidence levels," it signifies that a statistical relationship exists with at least a set level of certainty. Thus, when analysts say that a correlation exists at a 99 percent confidence level, they mean there is a 99 percent chance that a relationship exists between the two factors. Put another way, they mean that there is only a 1 percent chance of claiming that a relationship exists when in reality a relationship does not exist. Most statisticians are comfortable with a confidence level of 95 percent or greater. A number of statistics books cover this subject in depth; see, for example, Edwin Mansfield, *Statistics for Business and Economics*, 4th ed. (New York: W. W. Norton & Company, 1991).

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While demonstrating that a correlation relationship exists is valuable information, more important are the differences in the observed incidences of depression and suicide attempt among these adolescents. Table 3 shows the results of the statistical analysis that compared the percentage of adolescents who had been depressed or suicidal, based on sexual activity or lack thereof. The statistical significance level was then estimated for each statistic. In all cases, the difference between each pair of percentages is significant at the 95 percent level or higher. The differences are, by and large, more pronounced for young women than young men, but the relationship still holds.

As a final check of the analysis, a pair of logistic regressions was conducted to ascertain whether these results are being influenced by the socioeconomic factors of race, income, and age. When depression or attempted suicide are treated as dependent variables, and sexual activity, gender, age, race, and income are included as independent variables, the odds ratio (or predictive impact) of the sexual activity variable on the dependent variables remains statistically indistinguishable from a model that only includes the sexual activity variable. In short, sexual activity is a key independent predictor of depression and attempted suicide.

Finally, the Ad-Health survey utilizes a complex sample design in collecting the data, so any confidence interval statistic must be adjusted in order to take the sample design into consideration. To do this, the Ad-Health database was subjected to a "jackknife" procedure that corrected the standard errors of the statistics generated. In order to facilitate this analysis, the WesVar Complex Samples Version 4.2 software, developed by Westat, was used. Although the means, percentages, and correlation coefficients themselves do not change, the probability statistics (and their underlying standard errors, etc.) are corrected to take into consideration the sample design.[10]

10. A number of technical reference books are available that discuss jackknife, bootstrap, and other "resampling" techniques that correct for sample design issues. For a full description of the theoretical basis of these techniques, see Bradley Efron, *The Jackknife, the Bootstrap, and Other Resampling Plans* (Philadelphia: Society for Industrial and Applied Mathematics, 1982), and Jun Shao and Dongsheng Tu, *The Jackknife and Bootstrap* (New York: Springer Verlag, 1995).

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